

Contingency Plan

**Lockheed Martin Corporation
Martin Marietta Reduction Facility
3313 West Second Street
The Dalles, Oregon 97058**

September 2012

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I - Introduction

This document is the Contingency Plan for the **Lockheed Martin Facility located at 3313 West Second Street, The Dalles, Oregon 97058**, also known as the former Martin Marietta Reduction Facility (MMRF). This Plan is structured in accordance with requirements enumerated in 40CFR264 and reiterated in the National Response Team guidance for Integrated Contingency Plans. The SIC Code for this Facility is 4953 and the NAICS Code is 562211.

Lockheed Martin Corporation, 6801 Rockledge Drive, Bethesda, Maryland 20817 is responsible for implementation of this Plan.

The key contact for development, update and maintenance of this Plan is Gene Matsushita, Lockheed Martin Corporation, 818-847-0197.

The current revision date of this Plan is September 17, 2012.

A. Content and Purpose:

This Plan describes hazards to human health and/or the environment from fires, explosions or any release of hazardous wastes disposed at the site. Credible events leading to hazard exposure or release of hazardous materials (earthquakes, wild fires, erosion caused by torrential rains or any other form of severely inclement weather, acts of nature, acts of vandalism or terrorism, accidents, and/or equipment failures) are considered.

The purpose of this plan is to provide clear procedures for site personnel or emergency responders to mitigate consequences of such events, prevent spread of hazardous materials, and provide any warnings that may be necessary. These procedures are structured as sequences of specific actions to address particular events. Described are:

- HOW shall causal events, exposures to hazard, or release of hazardous material be detected and WHO is responsible for that diligent exercise
- WHO shall take WHAT specific actions WHEN and in WHAT ORDER
- To WHOM shall WHAT critical information be communicated and WHEN
- WHERE:
 - Hazards are located
 - Protective equipment is stored
 - Response gear is located
 - Gates, roads, structures on site are located
 - Critical Process Equipment is located
 - Access and egress routes are located
 - Plans (including this one), Site Information can be found
- WHO is the authorized Emergency Coordinator and WHO alternate(s) are in the event Emergency Coordinator is incapacitated or unavailable
- WHAT authorities the Emergency Coordinator has to act in order to fully execute this Plan
- HOW responders should address particular causal events (e.g., fog nozzle with water to douse grass or brush fire)
- WHY actions described in procedures are necessary (to inform consideration of appropriate options under unforeseen circumstances)

Arrangements with local authorities are described along with detailed situational procedures, location of emergency equipment, and evacuation plans.

B. Applicability:

This Plan applies to all Lockheed Martin personnel, contractors, and subcontractors involved in any aspect of work at the site. Other occupants of the site, Tenneson, Specialty Metals, and Northwest Aluminum are provided copies of this Plan, are briefed on its importance and content, and informed of the specific restrictions it contains. It is provided in advisory form to all external agencies, public officials, and regulators. All persons entering the boundaries of any area of the site under restricted access shall conform to this Plan or shall be immediately removed.

The “Site” is the approximately 350 acres within the physical boundary of the former Northwest Aluminum (NWA) plant with specific and particular emphasis on the RCRA Landfill, the CERCLA Landfill, the Scrubber Sludge Pond Area, the leachate collection/storage/conveyance systems, and NPDES outfall.

C. Duration:

This Plan (and all amendments or revisions) shall remain in effect unless explicitly superseded or rendered moot by NFA determination.

II - Scope

The scope of the Contingency Plan addresses the components of the Martin Marietta Reduction Facility Superfund Site located 3313 West Second Street, The Dalles, Wasco County, Oregon 97058. Latitude and Longitude for the Facility are: 45 degrees, 37 min, 30 sec North, 121 degrees, 12 min, 0 sec West. Driving directions to the Facility from Interstate 84 Exit # 84 are: merge onto US 30 continue on to West Second Street. Facility will be on the right.

The site is defined in the Unilateral Administrative Order for Response Action, CERCLA Docket No. 10-2012-0200, Section III Definitions, paragraph p as consisting of approximately 350 acres in total. Within this 350 acres are five general facilities of focus, listed below, which will be the primary emphasis of this Contingency Plan.

- Scrubber Sludge Pond Area
- RCRA Landfill
- CERCLA Landfill
- 300,000 Gallon CERCLA Tank
- Leachate collection and conveyance system

These facilities are further presented in **Section III, Site Description**, as depicted in **Figure 1, Site Plan**.

A. Organization of the Contingency Plan:

Sections I through XI of this document describe responsibilities during an emergency and provides an organization structure of the response participants, identifies personnel training requirements, presents communication protocols, and lists emergency equipment used at the site. **Section XII - Emergency Procedures**, documents a detailed response plan for all emergency response participants. Emergency procedures address three basic types of scenarios requiring response:

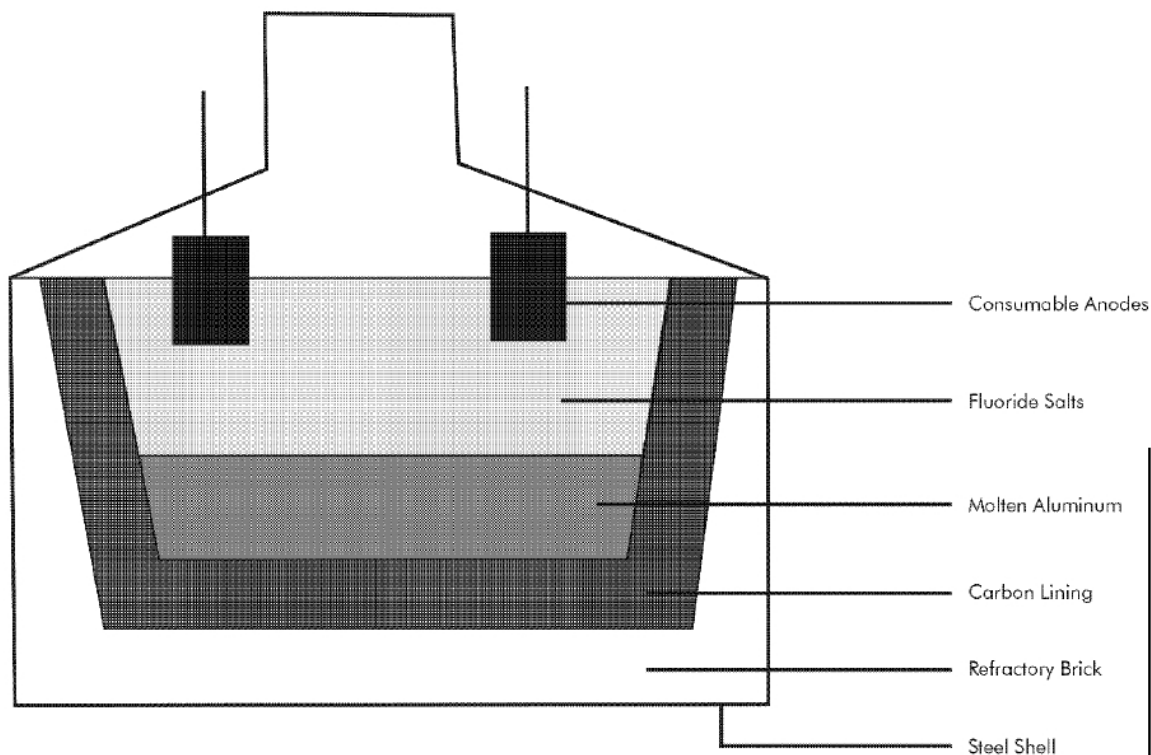
- (i) Acts of nature,
- (ii) Intentional acts of adverse impacts by third parties, and
- (iii) Unintended accidents associated with the operation, maintenance, and monitoring of the facilities.

Emergency procedures established in this Contingency Plan include responses to fires; explosions; spills of hazardous liquids; emissions of toxic, explosive, and asphyxiating gases; and exposure to solid wastes within the facilities.

Section XIII - Evacuation Plan establishes procedures for leaving the site during the course of an emergency. This section references figures depicting evacuation points for emergency conditions.

B. Aluminum Spent Pot Liner Waste (K088) Characteristics:

The waste of greatest concern in the RCRA and CERCLA landfills is K088 waste, spent pot liner (SPL) from primary aluminum production. The emergency procedures detailed below in **Section XII** are formulated to take into account the presence of the SPL waste under a range of potential emergency conditions. In addition, the primary source of hazardous constituents in the leachate is the SPL. Aluminum refining involves the reduction of alumina to aluminum metal. This process is driven by an electrical current in a molten cryolite (Na_3AlF_6) bath in a carbon-lined Hall cell or “pot.” The carbon liner is up to 15 inches thick and serves as the cathode in the electrolytic circuit. **Figure II–1** provides a simplified diagram of the pot in which this process occurs.



Reference: U.S. EPA, Office of Water, Development Document for Effluent Limitations Guidelines and New Source Performance Standards for the Primary Aluminum Smelting Subcategory of Aluminum Segment of the

Figure II-1

The process occurs under high voltage and temperature (up to 60,000 volts and 1,700°F). Fluoride from the electrolyte absorbs into the lining, and the reducing conditions form carbide and cyanide salts in the pot liner.

When the liner fails and is no longer capable of supporting the alumina reduction process, the pot is removed or dismantled. The pot liner near the bath which contains the fluoride salts and molten aluminum depicted in the figure above, is referred to as the “first cut.” The pot liner near the shell is referred to as the “second cut.” The “first cut” carbon lining is the subject of the K088 listing. Typical concentrations are provided below:

<u>Components</u>	<u>CAS #</u>	<u>Percent</u>
Carbon	7440-44-0	40 - 60
Cryolite†	13775-53-6	15 - 24
Aluminum oxide	1344-28-1	5 - 15
Sodium aluminate	1302-42-7	5 - 10
Silica, amorphous	7631-86-9	2 - 10
Aluminum fluoride	7784-18-1	2 - 5
Sodium hydroxide	1310-73-2	2 - 5
Silica (quartz)	14808-60-7	0 - 5
Iron oxide	1309-37-1	0 - 5
Aluminum	7429-90-5	1 - 3
Cyanide‡	57-12-5	0.2

May be present in trace amounts (< 1 %): carbides, nitrides and phosphides.

† Cryolite may contain small amounts (<5%) of other metal fluorides (e.g., calcium fluoride, magnesium fluoride or lithium fluoride).

‡ Average concentration. Small sections may contain up to 9 percent.

Every year, the aluminum industry generates around 100,000 tons of K088 waste. SPL is not particularly hazardous when managed properly. SPL releases hydrogen cyanide, acetylene, hydrogen, hydrogen fluoride, and methane if heated. In that case, hydrogen and methane will account for approximately 99 percent of gases generated.

III - Site Description

The former Martin Marietta Reduction Facility is primarily located within the physical boundary of the former Northwest Aluminum (NWA) plant located at 3313 West Second Street in The Dalles, Oregon 97058. During aluminum production operations the property included 350 acres of land zoned for heavy industry and manufacturing. The former aluminum plant has been demolished and the property of the former plant is currently undeveloped. In this Contingency Plan the site is defined as the 350 acre property formerly used for manufacturing and is shown on **Figure 1**. The route from the site to Mid-Columbia Medical Center is provided on **Figure 2**.

Lockheed Martin owns and ARCADIS operates waste management units including two closed landfills (referenced as the RCRA and CERCLA landfills), a Scrubber Sludge Pond Area, and a leachate collection and storage and conveyance system associated with both the RCRA and CERCLA landfills. These waste management units are administered by a State of Oregon Post Closure Care Permit (ORD 052 221 025). A utility building is present near the CERCLA landfill.

The site is bounded by railroad tracks to the west, with commercial/industrial properties located between the railroad tracks and Interstate I-84. The site is bounded by River Road to the east, with an industrial park located between River Road and the Columbia River. A portion of the southeastern portion of the site extends to the Columbia River as shown in **Figure 1**. The site is bounded to the north by River Road. The site is bounded to the south by Rodeo Grounds Landfill. Two commercial enterprises, Specialty Aluminum Products and Tenneson Engineering, are located in the western portion of the 350 acre site. The demolition of the former NWA plant was completed in 2012; however, NWA still owns the property formerly occupied by the plant. Undeveloped parcels located at the site are also owned by Chenoweth Development & Crestline Construction and Rocky Webb. Norcor Juvenile Detention Facility is located to the south of the site. Commercial facilities are located outside of the site boundaries to the east, south, and west of the site.

The areas of the site that are owned and controlled by Lockheed Martin are identified on **Figure 1**. The remainder of the site is owned and controlled by others. A list of the other facilities is provided in **Section IV, Exhibit IV-1**.

All waste management units are secured at the site. Each landfill, the Scrubber Sludge Pond area, and the leachate storage tank are secured by cyclone fencing with three strands of barbwire and locked gates. Lockheed Martin and ARCADIS have unrestricted access to the site through a gate along River Road in the CERCLA landfill fence. Access to the RCRA landfill is provided via this gate. Lockheed Martin and ARCADIS also have access to the Scrubber Sludge Ponds through another gate along River Road.

Lockheed Martin and ARCADIS do not control access to the remainder of the site outside of the waste management units. The areas outside of the waste management units do not represent a potential hazard to occupants based on currently available information.

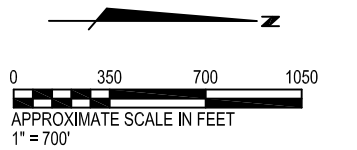
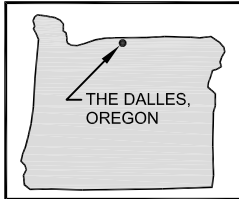


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LEGEND



LOCKHEED MARTIN CORPORATION OWNERSHIP



Drafter	M. HOEFER
Project Manager	K.W. SMITH
Task Manager	M. RISHER
Technical Review	M. RISHER / KW SMITH



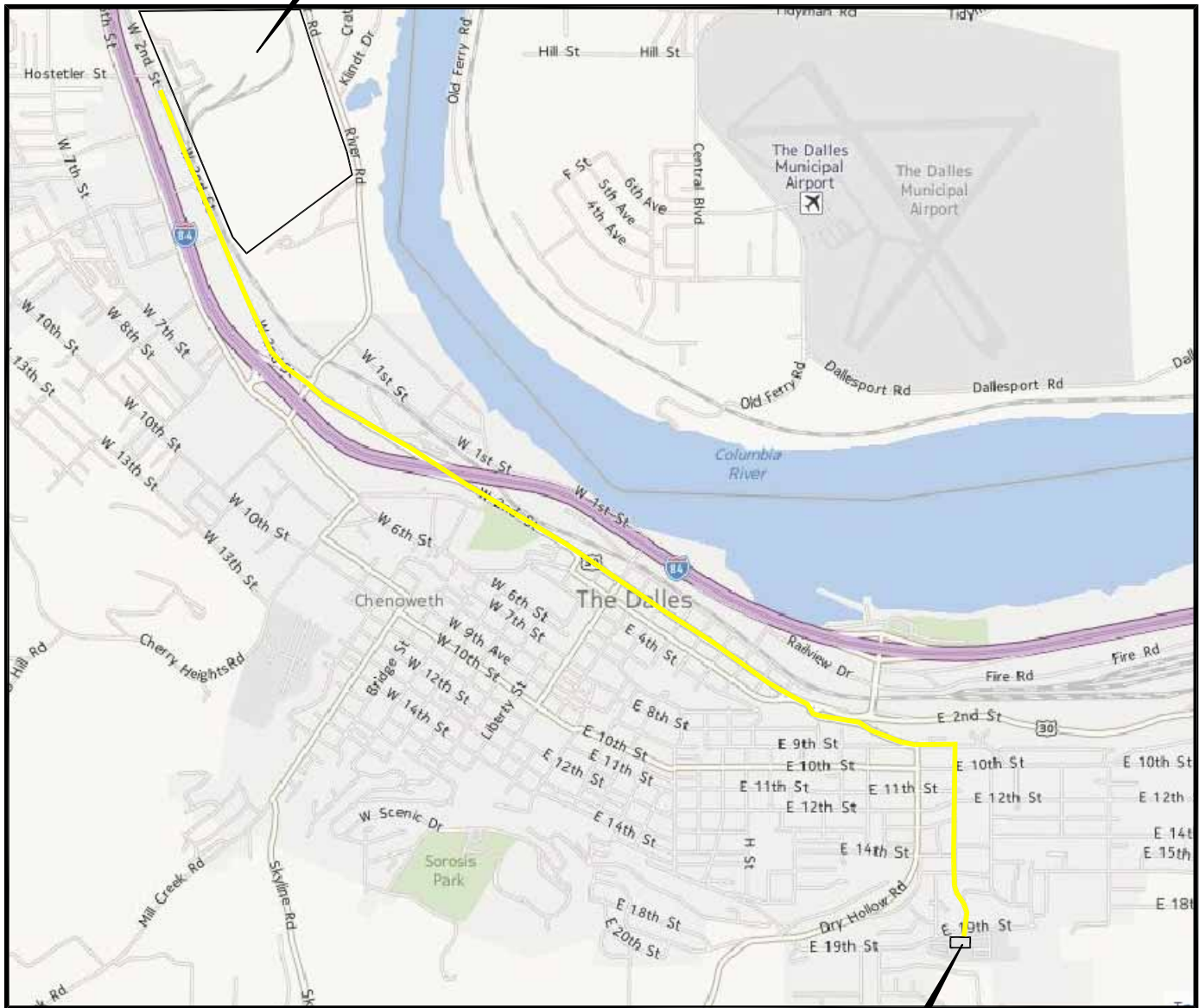
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LOCKHEED MARTIN CORPORATION
SITE LAYOUT - FACILITIES AND PROJECT AREAS

LOCKHEED MARTIN CORPORATION SITE
THE DALLES, OREGON

Project Number	GP000677.2012
Drawing Date	12/03/10
Figure	1

LOCKHEED MARTIN
CORPORATION SITE




MID-COLUMBIA
MEDICAL CENTER



Layout Tab: Model

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2012 © ARCADIS U.S., Inc.	Drafter M. HOEFER	 ARCADIS U.S., Inc. 1610 B Street, Suite 100 Helena, MT 59601 Tel: 406-449-7001 Fax: 406-449-3063 www.arcadis-us.com	LOCKHEED MARTIN CORPORATION HOSPITAL MAP LOCKHEED MARTIN CORPORATION SITE THE DALLES, OREGON	Project Number GP000677.2012
	Project Manager K.W. SMITH			Drawing Date 12/03/10
	Task Manager M. RISHER			Figure 2
	Technical Review M. RISHER / KW SMITH			

IV - Contingency Plan Management

A. Location of the Contingency Plan:

The Contingency Plan will be maintained in the following locations on-site:

- RCRA Building;
- CERCLA Building

A copy of the Contingency Plan will be provided to Bonneville Power Administration (BPA), People's Utility District, Tenneson Engineering, Specialty Metals, Golden Northwest (former NWA), Chenoweth Development & Crestline Construction, and Rocky Webb. A copy of the Contingency Plan will be provided to any additional subcontractors that may be required to perform work at the site. In addition, the Contingency Plan will be submitted to local police departments, fire departments, hospitals, and State and local emergency response teams which may be called upon to provide emergency services. A list of agencies and companies is provided in **Exhibit IV-1**.

Exhibit IV-1 Agencies and Companies Receiving Contingency Plan	
Mid Columbia Fire and Rescue 14400 W. 8 th Street The Dalles, Oregon (541) 296-9445	The Dalles Police Department 401 Court Street The Dalles, Oregon 97058 (541) 296-2233
Mid-Columbia Medical Center 1825 East 19 th Street, No. 3 The Dalles, Oregon (541) 298-3771	Eastern Region Clean-up Manager Oregon Department of Environmental Quality 400 E. Scenic Dr. Bldg. 2 The Dalles, Oregon 97058 (541) 298-7225
USEPA Region 10 Emergency Coordinator – Mr. Harry Craig 805 SW Broadway, Ste. 500 Portland, OR 97205 (503) 326-3689	Tenneson Engineering 3313 W. 2 nd Street, Ste. 100 The Dalles, Oregon 97058 (541) 296-9177
Specialty Aluminum 2929 West 2 nd Street The Dalles, Oregon 97058 (541) 296-6161	Golden Northwest (former NWA) 3313 W. 2 nd Street The Dalles, OR 97058 (541) 296-6161
Bonneville Power Administration 2448 W. 10 th Street The Dalles, OR 97058 (541) 296-3363	People's Utility District 2345 River Road The Dalles, OR 97058 (541) 296-2226
Chenowith Development & Crestline Construction 3775 Crates Way The Dalles, OR 97058 (541) 506-4000	Rocky Webb P.O. Box 1550 The Dalles, OR 97058

B. Amendment of the Contingency Plan

The Contingency Plan will be updated whenever:

- The facility permit is revised;
- The Contingency Plan fails in an emergency;
- The facility changes in its design, construction, operation, maintenance, or other circumstances in a way that materially increases the potential for fires, explosions, or releases of hazardous wastes, or changes the responses required in the event of an emergency;
- Material regulatory changes;
- Change in the Emergency Coordinator or Alternates;
- Changes in the emergency equipment at the site;

The Contingency Plan will be revised and the entire plan or a revised section will be resubmitted to the agencies and companies listed in **Exhibit IV-1**.

V – Responsibilities

A. Emergency Coordinator:

The Emergency Coordinator, acting on behalf of Lockheed Martin and ARCADIS in initiation of the procedures described herein, is given the authority to commit the resources of ARCADIS in mitigating the effects of an emergency situation. The Emergency Coordinator will have the authority to:

- Control the employees at the site during a site emergency;
- Request assistance from off-site emergency response teams;
- Purchase or hire outside assistance during an emergency situation;
- Expend funds to implement the Contingency Plan.

The purpose of this authority is to minimize potential hazards to human health or the environment resulting from an emergency situation. The Emergency Coordinator's order of priority during the response to an emergency is:

- Ensure human health and safety;
- Minimize adverse effects, or potential for adverse effects, to the environment;
- Preserve and prevent damage to private and public property.

The Emergency Coordinator is thoroughly familiar with the following:

- The Site Contingency Plan;
- The operations and activities at the site;
- The locations and characteristics of the waste handled;
- The location of all the records within the site; and
- The physical layout of the site.

The Emergency Coordinator and/or his alternates will be available at the site when present or available by phone or cell phone at the following locations:

Primary Emergency Coordinator:

Mr. Dan Shaver
3313 West Second Street
The Dalles, OR 97058
Cell: (541) 908-8053

Mr. Dan Shaver is a Field Technician employed by ARCADIS . He has the authority to commit up to \$500,000 in resources for ARCADIS as documented in the ARCADIS signature authority matrix, which is valid as long as he is an employee. Mr Shaver's duties include operations, inspections and maintenance of the landfill cap and leachate systems. Mr. Shaver also monitors the system on-site sensors. He has been instructed to work with the local authorities regarding access and equipment in case of emergency. If Mr. Shaver is not available, an Alternate Emergency Coordinator will perform his duties and will be the secondary contact in the event of an emergency. A remote access monitoring system is currently being evaluated to provide further redundancy.

Alternate Emergency Coordinators:

Mr. Mark Otto
111 SW Columbia, Ste. 670
Portland, OR 97201
Phone: (503) 220-8201

Mr. Lynden Peters
8725 Rosehill, Ste. 350
Lenexa, KS 66215
Cell: (913) 963-3360

B. Public Spokesperson:

Mr. Gary Cambre
Lockheed Martin Corporation
2940 University Parkway
Sarasota, FL 34243
Office: (941) 554-3862
Cell: (941) 228-3135

C. Availability:

The primary Emergency Coordinator or his alternates will be available at all times to handle emergency procedures. When the primary Emergency Coordinator is not available onsite, the Emergency Coordinator or alternates will be available by phone or cell phone at the contact numbers listed above. The Emergency Coordinator and alternates are thoroughly familiar with all aspects of the site's Contingency Plan, all operations and activities at the facility, the location and characteristics of the wastes handled, the location of all records at the site, and the facility layout.

D. Responsibility in an Emergency:

The primary responsibility of the Emergency Coordinator is to oversee the management of all Emergency Response Measures at the site.

1. Notification:

Whenever there is an imminent or actual emergency situation, the Emergency Coordinator will immediately:

- Notify any personnel that are present at the site.
- Notify the Specialty Aluminum Product's POC and/or available personnel.
- Notify Tenneson Engineering POC and/or available personnel.

- Notify appropriate local and State agencies with designated response roles if their help is needed.

National Response Center	(800) 424-8802
The Dalles FIRE, POLICE or AMBULANCE	911
Mid Columbia Medical Center	(541) 298-3771
Bonneville Power Administration	(541) 296-3363
People's Utility District	(541) 296-2226
USEPA Onsite Coordinator (Mr. Harry Craig)	(503) 326-3689
ODEQ (Mr. Fredrick Moore)	(541) 633-2011

If the Emergency Coordinator determines that the Site has had a release, fire or explosion that could threaten human health or the environment outside of the facility, the Emergency Coordinator or alternative/designee will report the findings as follows:

- If evacuation may be required, The Dalles Police and Fire Department will be contacted immediately. The Emergency Coordinator will be available to decide whether local evacuation will be necessary.
- The National Response Center will be contacted by the Emergency Coordinator or designee, who shall report the following:
 - name and telephone number of the reporter;
 - name and address of the site;
 - time and type of incident (e.g., release, fire, explosion);
 - name and quantity of material(s) involved, to the extent known;
 - the extent of injuries, if any; and
 - possible hazards to health or environment outside of the site.

2. Identification of Released Material

The Emergency Coordinator will gather information about the released materials (leachate, landfill gas) including the following:

- Identity of material;
- Hazards;
- Source;

- Amount and extent of release;
- Extent of injuries, if any.

3. Assessment of Health Affects

The Emergency Coordinator and/or alternate(s)/designee(s) will assess the possible hazards to human health or the environment caused by fire, explosion, or released materials and/or agents used to control the released materials. This may entail the use of such equipment of hand-held monitoring equipment and/or personal protective equipment such as supplied air breathing apparatus. The assessment will consider the direct and indirect of the fire or explosion and agents used to control spills, fires or explosions.

4. Off-Site Effects

If the Emergency Coordinator determines that the Site has had a release, fire or explosion that could threaten human health or the environment outside the facility, the Emergency Coordinator or alternative will report the findings in accordance with the details in **Section V.D.1.**

5. Prevention of Spread or Recurrence of Emergency

It is the responsibility of the Emergency Coordinator to take all reasonable measures to necessary to ensure that releases, fires or explosions to not occur, recur, or spread to other areas at the site. These measures will include coordination with the emergency response personnel identified in this section that will be contacted in case of an emergency. In the case of a release, the Emergency Coordinator or designee will lock down all valves and control systems associated with the leachate collection system at both the CERCLA and RCRA landfills.

6. Monitoring

If the Site stops operations in response to an emergency situation, the Emergency Coordinator will assure that the affected areas are monitored for imminent hazards visually and by means of the appropriate instrumentation (see **Section XI, Exhibit XI-1** for a listing of Emergency Equipment).

7. Treatment, Storage, and Disposal of Affected Material

After the emergency is over, the Emergency Coordinator will provide for cleanup, treatment, storage and disposal of the recovered leachate, impacted media or other material. The CERCLA building has an associated overflow/detention pond that can be use as an interim storage area for recovered leachate and/or impacted medial. Recovered leachate and/or impacted media will be profiled and disposed of at an appropriate regulated facility.

8. Steps Taken Prior to Site Start-up

Lockheed Martin and ARCADIS will ensure that in the affected area(s) of the site:

- No waste that may be incompatible with the released material is treated, stored, or disposed of until clean up procedures are completed;
- All emergency equipment listed in the Contingency Plan is decontaminated as needed and is fit for its intended use before operations are resumed;
- The appropriate State and local authorities are notified before operations are resumed in the affected area(s) of the Site.

9. Operating Records

If the Contingency Plan is implemented, the Emergency Coordinator will record the following items for any incident:

- Date of incident;
- Time of incident;
- Location;
- Details of Incident;
- Personnel and Agencies Involved;
- Comments.

10. Incident Report

Should an emergency occur at the site that actuates the Contingency Plan, a written report of the incident will be submitted to the EPA Onsite Coordinator within 15 days. The following information will be included in the report:

- Name, address, and telephone number of owner or operator;
- Date, time and type of incident;
- Name and quantity of material(s) involved;
- Extent of injuries, if any;
- Assessment of actual or potential hazards to human health or environment, where this is applicable; and
- Estimated quantity and disposition of recovered material resulting from the incident.

VI – Organization and Duties

Site Personnel Emergency Response: All employees working at the site will have a cell phone or will work in a group where a cell phone is available. Any employee discovering a release, fire or explosion that is not readily controllable with the equipment and materials at hand or which he or she has not been trained to manage, must immediately report this occurrence to the Emergency Coordinator, or if the Emergency Coordinator is the person discovering the incident to Lockheed Martin and ARCADIS management.

The Emergency Coordinator and site personnel will be trained and capable of taking emergency action as needed. The Emergency Coordinator and designated alternate Emergency Coordinators have the authority to engage qualified subcontractors to assist in the case of emergency response actions. Such actions may include spill containment, isolating leachate collection systems piping/storage vessels, or initial fire suppression. This may entail the use of personal protective equipment such as respirators or SCBA's or protective chemical resistant clothing.

VII – Coordinated Emergency Services

In the event of personal injury or environmental damage that cannot be immediately controlled and is determined to threaten human health or the environment, the Emergency Coordinator will immediately notify the appropriate local authorities or emergency response teams.

Upon acceptance of this Contingency Plan by the USEPA copy of the plan will be distributed to each of the response agencies and companies detailed in **Exhibit IV-1** within three working days, and those response agencies and companies will be contacted within the same three day period to set up a face to face coordination and discussion of the Contingency Plan. This contact will be made in order to:

- Familiarize them with the layout of the site, properties of hazardous wastes present, work places, access roads within the site, and evacuation routes;
- Establish agreements between the responding local Police and Fire Departments to designate primary emergency authority and support;
- Make arrangements to familiarize the Mid-Columbia Medical Hospital staff with the properties of hazardous materials present at the site, and the types of injuries or illnesses which could result from fires, explosions, or hazardous waste releases at the site..

VIII – Training Program

A. Level of Training Required for Routine Work:

Every employee who works on or near the RCRA landfill, the CERCLA landfill or the Scrubber Sludge Ponds for Lockheed Martin, its contractors, or their sub-contractors, except exempt personnel (described below) must have Appropriate Training.

- This requirement applies to:
 - a. Lockheed Martin Corporation
 - b. ARCADIS
 - c. CDM Smith
 - d. Local subcontractors and employees.
- Unless otherwise determined, “Appropriate Training” consists of one of the these combinations:
 - Current HAZWOPER Certification PLUS a site safety orientation authorized by Lockheed Martin.
 - Any other combination of health and safety training acceptable to the site safety coordinator (currently Donna Florom of ARCADIS).
- Work on other parts of this Site present lesser contamination hazards. For such tasks, Lockheed Martin may accept the following as Appropriate Training for those portions of the work **only**:
 - A site safety orientation authorized by Lockheed Martin.
 - Any other combination of health and safety training acceptable to the site safety coordinator (currently Donna Florom of ARCADIS).
- Exempt personnel: Site visitors, government inspectors, equipment and material delivery personnel will not be required to demonstrate their training status but will be

given a site safety briefing to familiarize them with the hazards and be 1) **escorted** by site safety trained workers while they are on the site, or 2) **restricted** as to the type of work they may perform or the places where they can do it, or both.

B. Level of Training Required for Emergency Response:

In addition to the training requirements for working at the site, employees of Lockheed Martin, its contractors or their sub-contractors must complete the following before they participate in an emergency response as described in **Section XII** of this Contingency Plan.

- Training as a hazardous materials technician as defined in paragraph (q) of OSHA's HAZWOPER standard PLUS attendance at a site-specific training session as described in **Section VIII C**.
- Because of the expertise they bring to bear, personnel provided by the Emergency Response Contractor and The Dalles municipal fire department need not attend the site-specific training program described in **Section VIII C**.
 - Consistent with the provisions of **Section VII, Coordinated Emergency Services**, representatives of the Dalles municipal fire department will be invited to every session of the site-specific emergency response course that Lockheed Martin holds.

C. Training Program for Site-specific Emergency Response:

With minor changes to reflect the sophistication of the attendees, the site-specific training session will follow the agenda listed on the following page.

<u>TIME</u>	<u>SUBJECT</u>
8:00 - 8:15	Introduction
8:15 – 8:40	OSHA Regulations for Spill Response Lecture
8:40 – 9:20	Overview of Contingency Plan Slide Show
9:20 – 9:30	Break
9:30 - 10:30	Response to Specific Emergencies Problem Sets

- Spill at the leachate control system
- Failure of the leachate storage tank
- Fire at the RCRA landfill
- Strangers on property with a truck

10:30 – 10:40	Break
10:40 – 11:20	Fire Extinguisher Training
12:00 – 1:00	Lunch
1:00 – 2:30	Simulated Spill and Fire Response Exercise

D. Training Records

Documentation of the training required by Subsections A – C will be kept on – site while those employees are on site. The records of that training will be kept at the office of the RCRA landfill.

IX – Routine Surveillance to Detect Potential Hazards

Routine maintenance of the landfill and the surrounding property is the best way to minimize the potential for emergencies.

A. Landfills:

The Lockheed Martin Contractor typically observes the facility five days per week in addition to the detailed quarterly inspections. The quarterly inspections will be documented on the attached inspection forms.

Thorough inspection of the landfill will occur quarterly from September 2012 through September 2013 and semi-annually after that. Additional inspections will occur immediately after severe weather events or upon written notification from EPA or the Director of the Oregon DEQ.

A Final Cover Inspection form will be filed at the onsite Lockheed Martin office following each inspection and will include the date of inspection, name of the person performing the inspection, and a description of any defects observed in the cover. The inspection forms will be kept onsite and made available to the Oregon DEQ or EPA upon request. The Inspector will check the final cover for such defects as erosion gullies or loss of cover, cracking or settlement of the final cover, burrows or other animal activities disturbing the final cover, and slumping or sliding of the final cover. In addition, the security fence will be inspected to monitor general conditions and verify that posts and fencing are securely anchored and attached, and that warning signs are clearly visible. The gas collection and control system will also be inspected and maintained, as necessary, as will the surveyed benchmarks. Benchmarks will be re-surveyed annually to determine if any slumping or subsidence has occurred. An example of the inspection form is provided in this section.

If any defects are observed that may impact the long-term integrity of the final cover system, Lockheed Martin will remedy the problem. Erosion gullies, cracking, slumping, burrows from

animals and settlements in the final cover will be repaired with compacted soil, crushed rock or rip-rap, as required, to restore the original grade.

The perimeter berm, access road, and drainage system will be inspected for problems such as ponding of water or channel diversions. These inspections will not be limited to the perimeter ditches encircling the landfills, but will include inspection of culverts, diversion levees, and ditches constructed as part of the closure. If any problems are noted, proper action will be taken by Lockheed Martin to repair or restore the affected drainage system.

B. Groundwater Compliance Monitoring Program:

To provide adequate means of protecting the groundwater, a compliance monitoring program is instituted. This program is being used, not because the RLF is leaking, but because up-gradient wells have detected contamination and previous work at the site under the CERCLA program have determined health-based limits. These health-based limits act as trigger levels in the hazardous waste permit to compel a corrective action program.

C. Emergency Drainage and Erosion Control:

The Lockheed Martin Contractor will monitor drainage channels, storm drain inlet and outlet structures, drainage diversion devices and basins, both onsite and immediately offsite routinely and during periods of intense rainfall. Support personnel and additional equipment are available to the Contractor by pre-arranged contact on short notice should circumstances require augmentation.

- Sand bags will be stored onsite prior to the start of the rainy season so that they are readily available for use as needs arise. The rainy season usually starts in early October.
- Onsite improvements will be thoroughly inspected after every significant rainfall event. Damage or areas of concern will be reported to supervisory/management for follow-up action.

- Temporary erosion control will be enhanced by seeding interim slopes with a quick growing cold season grass such as annual rye.
- Temporary plastic sheeting will be used to protect critical slope areas that show signs of erosion due to excess moisture infiltration.

D. Leachate Control System:

The only active portion of the landfill is the leachate collection system and the leachate transfer building. The leachate detection tank at the leachate transfer building has a volume in excess of approximately 450 gallons. The inspection schedule for the leachate detection tank is as follows:

- weekly if the leachate generation rate is greater than 250 gallons per month;
- monthly if leachate generation rate is less than 250 gallons per month, and greater than 250 gallons per quarter (three months);
- quarterly if the leachate generation rate is less than 250 gallons per quarter.

During these inspections, piping is inspected for leaks around fittings, corrosion and proper operation of the plant systems. Tanks are inspected annually inside and out for corrosion and signs of rupture. After an earthquake an inspection is conducted by the operator(s) for leaks, containment wall and tank integrity, broken piping, and proper operation.

Leachate collection system inspection efforts will be recorded on a Leachate Collection System Inspection Form. An example of the inspection form is provided in this section.

Routine operation of the landfill and the surrounding property is the best way to minimize the potential for emergencies. ARCADIS personnel typically observes the facility five days per week in addition to the detailed quarterly inspections.

Scrubber Sludge Ponds
Annual Post Closure Care Inspection
Lockheed Martin Corporation Site – The Dalles, Oregon

Date / Time: _____ Quarter: _____

Inspected by: _____ Signed: _____

Soil Cover Inspection:

	<u>Yes</u>	<u>No</u>	<u>Remarks</u>
Top erosion	_____	_____	_____
Channel erosion	_____	_____	_____
Animal burrows	_____	_____	_____
Exposed sludge	_____	_____	_____

Drainage System:

	<u>Yes</u>	<u>No</u>	<u>Remarks</u>
Ponded water	_____	_____	_____
Sedimentation in ditches / culverts	_____	_____	_____
Channels blocked	_____	_____	_____
Culverts blocked	_____	_____	_____

Fences and Gates:

Warning signs in place (minimum 9)	_____	_____	_____
Gate locks secured	_____	_____	_____
Damaged fence or posts	_____	_____	_____
Tumbleweeds (safety or fire hazard)	_____	_____	_____
Top wires secure	_____	_____	_____
Fence clear of trees	_____	_____	_____

Area Adjacent to the SSPs:

Vegetation control	_____	_____	_____
Intrusions	_____	_____	_____

General remarks and items requiring correction

Inspection Requirements: Annual and after significant weather events.

RCRA Landfill
Annual Post Closure Care Inspection
Lockheed Martin Corporation Site – The Dalles, Oregon

Date / Time: _____ Quarter: _____

Inspected by: _____ Signed: _____

Soil Cover Inspection:

	<u>Yes</u>	<u>No</u>	<u>Remarks</u>
Top erosion	_____	_____	_____
Channel erosion	_____	_____	_____
Animal burrows	_____	_____	_____
Exposed sludge	_____	_____	_____

Drainage System:

	<u>Yes</u>	<u>No</u>	<u>Remarks</u>
Ponded water	_____	_____	_____
Sedimentation in ditches / culverts	_____	_____	_____
Channels blocked	_____	_____	_____
Culverts blocked	_____	_____	_____

Fences and Gates:

Warning signs in place (minimum 9)	_____	_____	_____
Gate locks secured	_____	_____	_____
Damaged fence or posts	_____	_____	_____
Tumbleweeds (safety or fire hazard)	_____	_____	_____
Top wires secure	_____	_____	_____
Fence clear of trees	_____	_____	_____

Area Adjacent to the SSPs:

Vegetation control	_____	_____	_____
Intrusions	_____	_____	_____

General remarks and items requiring correction

Inspection Requirements: Annual and after significant weather events.

CERCLA Landfill
Annual Post Closure Care Inspection
Lockheed Martin Corporation Site – The Dalles, Oregon

Date / Time: _____ Quarter: _____

Inspected by: _____ Signed: _____

Soil Cover Inspection:

	<u>Yes</u>	<u>No</u>	<u>Remarks</u>
Top erosion	_____	_____	_____
Channel erosion	_____	_____	_____
Animal burrows	_____	_____	_____
Exposed sludge	_____	_____	_____

Drainage System:

	<u>Yes</u>	<u>No</u>	<u>Remarks</u>
Ponded water	_____	_____	_____
Sedimentation in ditches / culverts	_____	_____	_____
Channels blocked	_____	_____	_____
Culverts blocked	_____	_____	_____

Fences and Gates:

Warning signs in place (minimum 9)	_____	_____	_____
Gate locks secured	_____	_____	_____
Damaged fence or posts	_____	_____	_____
Tumbleweeds (safety or fire hazard)	_____	_____	_____
Top wires secure	_____	_____	_____
Fence clear of trees	_____	_____	_____

Area Adjacent to the SSPs:

Vegetation control	_____	_____	_____
Intrusions	_____	_____	_____

General remarks and items requiring correction

Inspection Requirements: Annual and after significant weather events.

**RCRA Leachate Collection System
Quarterly Post Closure Care Inspection
Lockheed Martin Corporation Site – The Dalles, Oregon**

Date / Time: _____ Quarter: _____

Inspected by: _____ Signed: _____

Tank (sump) Inspection:

	<u>Yes</u>	<u>No</u>	<u>Remarks</u>
Leachate valve open	_____	_____	_____
Sump alarm system tested	_____	_____	_____
Secondary petcock checked	_____	_____	_____
Quarterly wet test of leak alarm	_____	_____	_____
Quarterly wet test of high level	_____	_____	_____
Leachate in sump	_____	_____	_____
If pumped, record gallons	_____	_____	_____

Leachate Drum Inspection:

	<u>Yes</u>	<u>No</u>	<u>Remarks</u>
Leachate stored in drums	_____	_____	_____
If so, are drums properly marked	_____	_____	_____
If so, Hazardous Waste Decal w/ date	_____	_____	_____
Drum condition	_____	_____	_____

Building and Slab:

	<u>Yes</u>	<u>No</u>	<u>Remarks</u>
Warning signs in place	_____	_____	_____
Doors locked	_____	_____	_____
Exit light checked	_____	_____	_____
Emergency light checked	_____	_____	_____
Emergency equipment	_____	_____	_____
Roofing and siding	_____	_____	_____
Outside dewatering pump	_____	_____	_____
Concrete slab inspected	_____	_____	_____
Sump inspected	_____	_____	_____

General remarks and items requiring correction:

Inspection Requirements:

Weekly	Until leachate less than 250 gallons/month
Monthly	Until leachate less than 250 gallons/quarter
Quarterly	Until less than 250 gallons/year

**CERCLA Leachate Collection System
Quarterly and Annual Post Closure Care Inspection
Lockheed Martin Corporation Site – The Dalles, Oregon**

Date / Time: _____ Quarter: _____

Inspected by: _____ Signed: _____

Quarterly:

	<u>Yes</u>	<u>No</u>	<u>Remarks</u>
LS #1: WL between floats	_____	_____	_____
Pump pulled or checked	_____	_____	_____
Alarm light tested	_____	_____	_____
Electric cables good condition	_____	_____	_____
Piping in good condition	_____	_____	_____
LS #2: WL between floats	_____	_____	_____
Pump pulled or checked	_____	_____	_____
Alarm light tested	_____	_____	_____
Electric cables good condition	_____	_____	_____
Piping in good condition	_____	_____	_____
LCS pipes unobstructed (debris/biofoul)	_____	_____	_____

Annually:

	<u>Yes</u>	<u>No</u>	<u>Remarks</u>
Double-wall pipe alarm tested	_____	_____	_____
Visual inspection of 300,000-gallon tank	_____	_____	_____
Visual inspection of 4,700-gallon tank	_____	_____	_____

General remarks and items requiring correction:

Inspection Requirements: Quarterly and Annually (see above)

X – Communications

Site personnel are equipped with cell phones while on site, or operate in a buddy system with another site person who has a cell phone. In addition, should a situation occur requiring evacuation of personnel, the Emergency Coordinator or a person designated by the Emergency Coordinator will check to confirm that all personnel onsite have checked in at one of the two evacuation points listed for the site (**Figure 1**). Upon confirmation that all site personnel are accounted for, the Emergency Coordinator or a person designated by the Emergency Coordinator will notify any personnel present at both Specialty Aluminum Products and Tenneson Engineering of the emergency in accordance with this Contingency Plan.

Neither the RCRA landfill sump building nor the CERCLA landfill main utility building (adjacent to the 300,000 gallon leachate collection tank) are equipped with telephone systems, therefore the cell phone requirement applies at these buildings in addition to the full site.

A visual red light high water/leachate alarm for the RCRA sump is located on the outside of the RCRA landfill sump building, and can be seen from the access gate located at the former NAW entrance gate.

A visual red light high water/leachate alarm is present at the control panels for both Lift Station No. 1 and Lift Station No. 2 at the CERCLA landfill. Both alarms can be seen from the access gate located at the former NAW entrance gate.

XI – Emergency Equipment

Following, is a list of the emergency equipment located at the facility, a brief description of the equipment and location on-site.

A. Monitoring Equipment:

The air quality parameters of greatest concern at this site are oxygen, combustible gas, hydrogen sulfide, and hydrogen cyanide. The most appropriate device to monitoring those exposures is a multi-gas meter like the MX6 I-Brid by Industrial Scientific (or equivalent). The sensors present at the site for the gases of concern are as follow:

<u>Methane</u>	Methane will be measured using the MX6 I-Brid by Industrial Scientific (or equivalent) with the combustible sensor.
<u>Oxygen</u>	Oxygen will be measured using the MX6 I-Brid by Industrial Scientific with the Oxygen sensor (or equivalent).
<u>Hydrogen Sulfide (H₂S)</u>	H ₂ S will be measured using the MX6 I-Brid by Industrial Scientific with the H ₂ S/CO sensor (or equivalent).
<u>Carbon Dioxide (CO₂)</u>	Carbon Dioxide will be measured using the MX6 I-Brid by Industrial Scientific with a CO ₂ specific sensor (or equivalent).
<u>Hydrogen Cyanide (HCN)</u>	HCN will be measured using the MX6 I-Brid by Industrial Scientific with the toxic sensor (or equivalent).
<u>Hydrogen</u>	Hydrogen gas will be measured using the MX6 I-Brid by Industrial Scientific using the combustible sensor (or equivalent).

<u>Hydrofluoric Acid</u>	Hydrofluoric acid will be measured using colorimetric detector tubes with a measuring range of 0.2 to 30 ppm (Sensidyne 156S or equivalent).
<u>Acetylene</u>	Acetylene will be measured using the MX6 I-Brid by Industrial Scientific sensor (or equivalent).
<u>Phosphine</u>	Phosphine will be measured using the MX6 I-Brid by Industrial Scientific sensor (or equivalent).
<u>Ammonia</u>	Ammonia will be measured using the MX6 I-Brid by Industrial Scientific sensor or equivalent.

No other type of monitoring device is appropriate for the hazards at this facility.

B. Communications Equipment

All on-site communication will occur through face-to-face conversation. All communication with off-site persons will occur through cellular telephones. Lockheed Martin has verified that cellular reception at the site is quite adequate.

C. Personal Protective Equipment

Lockheed Martin has provided an adequate ensemble of personal protective equipment at the site. Personal health and safety equipment are located at the site includes Level B, C and D personnel protective equipment in accordance with the site Health and Safety Plan and HASP Addendum (August 27, 2012). This equipment is listed in **Table XI-1**.

Employees have received adequate instruction in the selection and use of personal protective equipment through the training they have completed (see the site HASP and **Section VIII**).

D. Emergency Response Equipment

Lockheed Martin has provided an adequate ensemble of emergency response equipment at the site. This equipment is listed in **Exhibit XI-1**.

Fire extinguishers are present at the site at the CERCLA landfill main utility building located adjacent to the 300,000 gallon leachate collection tank, and site personnel conducting site inspections and maintenance are required to carry a fire extinguisher in their work vehicle at all times. Fire extinguishers are inspected at least once a month by site personnel and replaced as necessary.

Exhibit XI-1 - Emergency Equipment List

Equipment	Location	Use
Shovels	Leachate transfer building	To assist in construction of berm/dike in event of discharge.
Hand transfer pump		To collect and transfer small spills.
Buckets	Leachate transfer building	To collect and transfer small spills.
Splash-resistant suit		To protect personnel from waste exposure.
First-aid kit	Leachate transfer building	To be used as an immediate measure to remedy injuries to personnel. Follow-up checkup is recommended.
Burn kit	First-aid kit (Leachate transfer building)	Medical
Oxygen		Medical
Portable sump pump	Leachate transfer building	Used to pump leachate.
Fire Extinguishers		Fire control
Sorbent Sock / Barriers	Leachate transfer building	To control small spills.
Disposable boot covers		Personal protection
Disposable Saranex suits	Leachate transfer building	Personal protection
Viton gloves		Personal protection
Rubber gloves	Leachate transfer building	Personal protection
Lab goggles		Personal protection
Dust masks	Leachate transfer building	Personal protection
Industrial Scientific MX6 I-Brid Multi-gas meter		Air Quality measurement
Air-purifying respirators	Leachate transfer building	Personal protection
Hard hats		Personal protection

XII Emergency Procedures

A. First Response:

Personnel working at the waste management units are constantly alert for indicators of potentially hazardous situations and for signs of symptoms in themselves or others that warn of hazardous conditions and exposures. Once the field personnel are aware of a potential spill, fire, or release, the individual(s) will identify the character, source, amount, and extent of incident. Relevant questions to ask in collecting information on the potential incident include:

- What type of emergency is occurring?
- What areas have been or will be affected?
- Are there any injuries?
- Is there need for an exclusion zone?
- Is the source under control?
- What types of response resources are needed?
- Are you or others potentially in danger?

Personnel working at the waste management units will then take the following steps:

- Notify personnel in the immediate area that an emergency exists.
- Contact the Emergency Coordinator of the incident. Relay the details of the emergency as calmly and accurately as possible. If the Emergency Coordinator is not available, contact the Alternate Emergency Coordinator. Contact information for the Emergency Coordinator and Alternate Emergency Coordinator are provided in **Section V.A.**
- If properly trained, provide assistance in evacuation, first aid, or emergency response until the Emergency Coordinator or Alternate Emergency Coordinator arrives on the scene.

B. Response to Injuries:

If an injury requires emergency responders, field personnel must call 911 immediately and provide all pertinent information. Field personnel must escort the emergency responders to the scene of the accident. If the injury does not require emergency responders, field personnel must arrange for on-site first aid or send the injured person for medical attention.

C. Emergency Command Post

The Emergency Coordinator or Alternate Emergency Coordinator will be responsible for establishing a base from which to assess and direct response actions during an emergency. When the Emergency Coordinator or Alternate Emergency Coordinator is alerted to an emergency situation, they will immediately determine if access to the waste management units needs to be restricted. If yes, the gates providing access to the area will be secured. All non-essential personnel will be directed from the area by the Emergency Coordinator or Alternate Emergency Coordinator.

D. Fires and Explosions

Fire Watch

Every member of the site team will be responsible to observe and report fires and conditions that could lead to fires.

Response to Fires

Fire extinguishers are provided in clearly marked, accessible locations at the facility. Lockheed Martin personnel, contractors, and subcontractors whose regular duties involve presence at the site are trained in the use of fire extinguishers on the site, understand the particular fire hazards associated with materials at the site, and have been instructed in appropriate response techniques. Unless the fire at time of discovery is clearly within the capacity of immediately available fire

fighting equipment to extinguish, personnel are directed to immediately call 911, withdraw a safe distance from the fire and proceed with specified notifications. All personnel are instructed that the first priority is personal safety. No site personnel shall knowingly place themselves or their co-workers in danger of harm from any fire.

Unless there is obvious visible damage to the landfill caps or unless spent pot liners are otherwise exposed, Fire Fighters can use water spray to extinguish Class A surface fires. Water spray should not be intentionally directed at flames emanating from vent pipes. Water nozzles should not be directed such that the full force erodes or disturbs the landfill cap. At no time should fire hoses be inserted in vent pipes. Incidental overspray that falls into vent pipes will not ignite gases or amplify associated hazards and is therefore not a concern. .

Water shall not be used on Class C fires.

Response to Conditions that May Cause Fires

When a condition is observed that could increase the chance of a fire, the Lockheed Martin Emergency Coordinator shall be notified. All personnel on the site have the authority to stop work in any demonstrably unsafe circumstance and this shall be exercised to stop any field activity that increases the risk of fire until appropriate controls are in place. Prudent actions are necessary, including withdrawal from the area, to eliminate or reduce the hazardous condition.

1. RCRA and CERCLA Landfills

These landfills have engineered covers with grass vegetation. The RCRA landfill has an engineered liner. The CERCLA landfill does not. The RCRA landfill holds K088 waste. The CERCLA landfill contains several kinds of waste, but K088 is the waste of greatest concern. Hazards of concern at these landfills include:

- K088 waste will burn if ignited, and it releases hydrogen cyanide, acetylene, hydrogen, hydrogen fluoride, and methane if heated above 150°F. Hydrogen, acetylene, and methane account for approximately 99 percent of gases generated upon heating.

- The only fuel present on the surface of these landfills is grass. A grassland fire can produce heat fluxes of 1,000 watts/m² for up to 15 minutes. That's enough heat flux to raise the temperature of the top 10" of soil by 1.5° F.
- In 1991, Lockheed Martin placed an engineered cover on these landfills. The cover is 5 to 10 feet thick. This cover insulates the waste enough to prevent ignition.
- The waste in the landfill is almost continuously moist. The reaction between the waste and water produces hydrogen cyanide, phosphine, acetylene, hydrogen, hydrogen fluoride, and methane gases. These gases are flammable and toxic.
 - All measurements to date indicate that no landfill gas vent releases more than one cubic foot a minute of gas. This gas would participate in a fire, but would produce less than a one degree change in the thermal radiation hazard 100 yards away.
 - In 1991, Lockheed Martin placed an engineered cover on these landfills. The cover is 5 to 10 feet thick. This cover insulates the waste enough to prevent heating.
- Unlike a municipal landfill, the gas in these landfills contains significant (>10%) concentrations of oxygen. Ignition of the gas inside the landfill is a concern.
 - To prevent ignition of the waste inside the landfills, upon concurrence of EPA, Lockheed Martin will place a flame arrestor in the base of each landfill gas vent and a flapper-type pressure relief valve at the discharge point. The combination of these devices will keep fire from descending the vent to reach the waste.
 - As the vents at the RCRA landfill are designed to collect and vent potential gas production from the landfill, these vents have been fitted with lightning rods to minimize the potential for fires and/or explosions that could occur from a lightning strike. As a matter of routine maintenance, system inspections will be conducted to ensure that these lightning rods are properly connected and grounded in a way that cannot lead to ignition of the waste.

- The consequences of a fire in and near the landfills are lower than those for most properties in the community. Unless there is obvious visible damage to the landfill caps or unless spent pot liners are otherwise exposed, Fire Fighters can use water spray to extinguish Class A surface fires. Water spray should not be intentionally directed at flames emanating from vent pipes. Water nozzles should not be directed such that the full force erodes or disturbs the landfill cap. At no time should fire hoses be inserted in vent pipes. Incidental overspray that falls into vent pipes will not ignite gases or amplify associated hazards and is therefore not a concern.

2. Sludge Ponds

The fluoride waste in these ponds does not burn, but it can disassociate to release hydrofluoric acid gas if it's heated above 200°F.

In 1991, Lockheed Martin placed a vegetated soil cover on the Scrubber Sludge Ponds. The soil layer is 24" thick. This cover provides enough thermal insulation to limit the heating of remaining waste to few degrees at most. The waste would not, therefore, affect the consequences of a fire.

The consequences of fire in and near the Scrubber Sludge Ponds are just the same as most properties in the community. Fires can be addressed by the municipal fire department following the procedures they use at most properties with no increased risk.

3. Leachate Collection and Treatment Systems

A fire could damage the pumps, treatment units, power systems, control panels, and the pipelines that carry landfill leachate to the leachate control tank. Fire could interrupt the ability of this system to control liquid levels in the landfills. That interruption would create a long term, but not acute, problem for management of this waste.

By damaging pipelines or pumps, fire could cause a release of collected leachate equal to the inventory in the pipes (generally less than 1,000 gallons). This untreated leachate contains

contamination at levels that are of concern for the environment, but that present no acute hazard to workers, community residents, or fish.

Because the leachate would present health hazards for which the municipal fire department's normal precautions are fully adequate, fires in this system can be addressed following the procedures they use at most properties with no increased risk.

4. Rodeo Grounds

The Dalles Rodeo Grounds are on Lockheed Martin Company -Martin Marietta Reduction Facility Superfund Site. A former municipal waste landfill underlies part of the grounds.

This landfill has no landfill gas vents, leachate control systems, or engineered structures. The consequence of this lack of engineering is that fires on the Rodeo Grounds are like those at most properties in the community. Fires can be addressed by the municipal fire department following the procedures they use at other properties with no increased risk.

5. Other Property (Roadways, the Old Plant, Tenant Properties)

No waste or waste management supplies are present on these portions of the site. The consequences of fire on these portions are just the same as most properties in the community. Fires can be addressed by the municipal fire department following the procedures they use at most properties with no increased risk.

E. Earthquakes

This Contingency Plan establishes the actions required to respond to emergency situations associated with an earthquake. The Dalles is located in Seismic Zone 3 proximal to the Cascadia Fault. According to the United States Geologic Services database there is a slightly greater than 28% chance of a major earthquake (greater than 5.0 magnitude) within 50 kilometers of The Dalles within the next 50 years. The largest earthquake recorded within 100 miles of The Dalles was a 5.6 magnitude event which occurred in 1993.

The data from several major California earthquakes indicate that the general performance of landfills during earthquakes is from good to excellent. The observational database applied to make this assessment included seismic events ranging in magnitudes from 5.6 to 7.3 with a broad range of faulting styles (i.e. right and left lateral, reverse, thrust and blind thrust faulting). (Source: Performance of Solid Waste Landfills in Earthquakes; Matasovic, Kavazanjian, and Anderson, 1998.)

It is not anticipated that the cover systems on the RCRA and CERCLA landfills would experience sufficient damage under a seismic event such that exposure to the underlying waste would occur. The non-rigid nature of the waste prism and cover system, including the plastic barrier layers, accommodates a significant amount of movement resulting from a seismic event. Impacts to the Scrubber Sludge Pond under a significant seismic event would most likely consist of damage to the fence line surrounding the site and/or fallen trees. The cover of the Scrubber Sludge Pond consists of an approximately five foot depth of a non-engineered soil cap; cracking of the cap during the ground movement caused by an earthquake is possible. This could result in the surface exposure of the scrubber waste in limited areas but the release of significant, toxic gas emissions is not anticipated.

The pipelines and sumps associated with the leachate collection and conveyance system have the potential for damage during a major seismic event. Pipelines could separate at joints, or break, as a result of the ground movement caused by the earthquake. The spill or release of leachate from the tanks and conveyance lines would result from the system damage.

An earthquake could occur when there is no one on site, when only the Emergency Coordinator/Site Manager is on site, or activities include multiple staff working on site (i.e. sampling events, field visits, etc.). In all cases, the Emergency Coordinator has the primary responsibility for accounting for all employees and staff that may be on site during the earthquake event. This will be accomplished by identifying the locations of all site personnel reflected in the health and safety sign in sheet for the day. If no personnel have signed in for the day, the Emergency Coordinator shall tour the site to confirm that no staff is present or incapacitated and unable to evacuate from the premises. This tour will be accomplished from the access roads outside of the fenced in waste management units. In all cases personnel shall follow the evacuation plan protocols described in **Section XIII** of this Contingency Plan.

If a significant seismic event occurs during night time hours, or a period when the site is not staffed, the Emergency Coordinator will travel to the site as soon as possible to perform the reconnaissance activities described below.

The Emergency Coordinator's next priority is to assess the damage that may have resulted to the on-site facilities. This will be accomplished in the following order with the following actions:

1. 300,000 gallon leachate storage tank and ancillary facilities
 - Observation of the tank area from outside of the security fence. The intent is to determine if the tank has been damaged and, specifically, if the contents of the tank have leaked due to the damage.
 - Observation of the containment area adjacent to the tank for signs of breaches or damage to containment structure. Assessment of the presence of leachate in the containment area.
 - If spills have been observed, initiate the spill response procedures detailed in this Contingency Plan.
2. Leachate collection manholes and conveyance systems associated with the CERCLA and RCRA landfills.
 - Turn off the power supply to the pumping systems associated with the CERCLA landfill leachate collection and conveyance system.
 - Observation of the manholes adjacent to the CERCLA landfills for indications of damage to the manhole structures and specifically releases of liquid from these structures.
 - If spills have been observed, initiate the spill response procedures detailed in this Contingency Plan.
3. RCRA Landfill
 - Observation of the cover system of the RCRA landfill from a reconnaissance performed around the landfill footprint at the base of the landfill.

- If damage to the cover system is observed, such as the formation of cracks or the sloughing of the cover material with the potential for the exposure of waste to the landfill, discontinue the reconnaissance activities until additional site staff is available to continue the damage assessment.
- A thorough evaluation of the integrity of the cover system will commence after assembling a team of at least two individuals and donning the appropriate protective clothing and equipment.
- Determine if emergency repairs to the final cover is warranted; immediate repairs would be required if deep sink holes develop, slope failure occurs, or significant sloughing of the cover material has resulted in the exposure of the geosynthetic cover system barrier layer or the waste.
- The Emergency Coordinator shall direct mobilization of the emergency response contractor to initiate cover repair operations. These would typically consist of the temporary regrading and compaction of the existing cover material, soil and gravel, to close cracks or cover exposed waste.
- When the emergency repair has been completed, the affected area shall be staked and monitored on a daily basis for a seven day period to determine if gas emissions are present from the affected area. After the seven day period, monitoring will be performed on a weekly basis until final repairs have been made.

4. CERCLA Landfill

- Observation of the cover system of the CERCLA landfill from a reconnaissance performed around the landfill footprint at the base of the landfill.
- If damage to the cover system is observed, such as the formation of cracks or the sloughing of the cover material with the potential for the exposure of waste to the landfill, discontinue the reconnaissance activities until additional site staff is available to continue the damage assessment.

- A thorough evaluation of the integrity of the cover system will commence after assembling a team of at least two individuals and donning the appropriate protective clothing and equipment.
- Determine if emergency repairs to the final cover is warranted; immediate repairs would be required if deep sink holes develop, slope failure occurs, or significant sloughing of the cover material has resulted in the exposure of the geosynthetic cover system barrier layer or the waste.
- The Emergency Coordinator shall direct mobilization of the emergency response contractor to initiate cover repair operations. These would typically consist of the temporary regrading and compaction of the existing cover material, soil and gravel, to close cracks or cover exposed waste.
- When the emergency repair has been completed, the affected area shall be staked and monitored on a daily basis for a seven day period to determine if gas emissions are present from the affected area. After the seven day period, monitoring will be performed on a weekly basis until final repairs have been made.

5. Scrubber Sludge Pond

- Perform monitoring of the perimeter fence line to assess the integrity of the fencing system in securing the facility as soon as possible after the earthquake. The Emergency Coordinator shall direct the repair of the fencing system if significant breaches have occurred due to the seismic event.
- Conduct an inspection of the Scrubber Sludge Ponds, consistent with the quarterly and annual inspection protocols currently established, within 48 hours of the earthquake. The inspection will focus on the fence and gates and potential damage to the soil cover system.

- Establish an action plan to implement the required repairs based upon the findings of the inspection. The plan shall clearly define the activities associated with the required repairs and the schedule for implementation of the work.

Routine site operations consist of quarterly and annual monitoring of the facilities listed above guided by the use of inspection forms identifying specific features of the facilities to be monitored and observed. These inspection forms, included in this Contingency Plan in **Section IV- Routine Surveillance to Detect Potential Hazards**, will be utilized by the Emergency Coordinator to facilitate the reconnaissance activities described above.

F. Hazardous Material Releases

1. Airborne Releases

Contaminants Present

The air contaminants of greatest concern at this site are oxygen, combustible gas, hydrogen sulfide, and hydrogen cyanide. These gases have these hazards.

The hazards of the site contaminants include the dermal or inhalation risks from HCN, H₂S, CO₂, methane, and phosphine.

- CO₂ is a cerebral vasodilator. Inhaling high concentrations can cause headache, dizziness, disorientation, nausea and fatigue. A level of CO₂ at or above 40,000 ppm is immediately dangerous to life and health.
- Cyanide salts form lethal HCN gas under acidic conditions. HCN is an extremely toxic gas and can be absorbed through the skin. HCN is a chemical asphyxiant, rendering oxygen unavailable to tissues and causing death. Exposure to low concentrations can cause headache, nausea, dizziness, difficulty breathing, and vomiting. A level of HCN at or above 50 ppm is immediately dangerous to life and health.

- H₂S is a chemical asphyxiant, rendering oxygen unavailable to tissues and causing death. High concentrations of H₂S can cause shock, convulsions, inability to breathe, unconsciousness, coma and death. Effects can occur within a few breaths and even with a single breath. At low to moderate concentrations, severe eye and respiratory irritation, including accumulation of fluid in the lungs, headache, dizziness, nausea and vomiting can occur. A level of H₂S at or above 100 ppm is immediately dangerous to life and health.
- Phosphine is a colorless, toxic gas and is extremely flammable and explosive. Phosphine is a respiratory irritant and attacks the cardiovascular and respiratory systems leading to cardiac arrest, peripheral vascular collapse and pulmonary edema. Exposure occurs primarily through inhalation but dermal exposure can cause systemic effects. Phosphine is a central nervous system depressant and effects of minor exposure include headache, dizziness, and trembling of extremities while greater exposures lead to seizures and coma. Gastrointestinal symptoms are usually the first symptoms to occur after exposure and include nausea, and vomiting. Phosphine is heavier than air and may cause asphyxiation in enclosed, poorly ventilated, or low lying areas. Phosphine is immediately dangerous to life and health at levels of 50 ppm.
- Methane is an explosive, flammable and colorless gas that can reduce the amount of oxygen in the air. Methane is lighter than air when both are at the same temperature. Methane presents multiple atmospheric hazards. With a 10% displacement of the atmosphere, methane can explode violently.
- Exposure to an oxygen-deficient atmosphere (less than 19.5% oxygen) may produce dizziness, nausea, vomiting, loss of consciousness and death. At levels of less than 12% oxygen unconsciousness and death can occur without warning. With a 90% displacement, methane can asphyxiate an unprotected worker within 5 minutes.

Further health effect information regarding these compounds can be found through the following link:

<http://www.cdc.gov/niosh/docs/2005-149/pdfs/2005-149.pdf>

Levels of Exposure

Exhibit XII-1 shows a model of emissions of hydrogen cyanide assuming that the off-gas contains 1% hydrogen cyanide (the maximum concentration produced on heating), and that the vent discharges gas at one cubic foot per minute (this is a higher flow rate than site teams have ever measured). ALOHA 5.4.1.2 (a model supported by the National Oceanic and Atmospheric Administration) shows a peak concentration of 0.127 ppm at 16 feet. This concentration is much lower than the ACGIH TLV of 4.7 ppm.

The model shows that emission of hydrogen cyanide at rates higher than ever seen cannot produce a concentration high enough to create concern, even at a distance of 16 feet. These results are completely consistent with all of the air quality measurements taken at the site. Lockheed Martin concludes that the site presents no airborne health hazard for people who stay more than four feet from the landfill gas vent.

Responses to Release

Lockheed Martin has concluded that the waste management units on this site cannot release air contaminants at a rate that would harm public health. The one exception to this statement would be the introduction of strong acid into the landfill by persons who wanted to create a release. Procedures for preventing that scenario are addressed in **Section XII.F.1**.

Exhibit XII-1. ALOHA Emissions Model

SITE DATA:

Location: PORTLAND, OREGON

Time: September 15, 2012 0925 hours PDT

CHEMICAL DATA:

Chemical Name: HYDROGEN CYANIDE Molecular Weight: 27.03 g/mol

AEGL-1(60 min): 2 ppm AEGL-2(60 min): 7.1 ppm AEGL-3(60 min): 15 ppm

IDLH: 50 ppm LEL: 60000 ppm UEL: 410000 ppm

Ambient Boiling Point: 78.3° F

Vapor Pressure at Ambient Temperature: 0.94 atm

Ambient Saturation Concentration: 936,385 ppm or 93.6%

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)

Wind: 2 miles/hour from S at 3 meters

Ground Roughness: open country Cloud Cover: 5 tenths

Air Temperature: 75° F Stability Class: B

No Inversion Height Relative Humidity: 50%

SOURCE STRENGTH:

Direct Source: 0.01 cubic feet/min (assumes 1 ft³/min of gas at 1% HCN)

Source Height: 5 feet Source State: Gas

Source Temperature: equal to ambient

Source Pressure: equal to ambient

Release Duration: 60 minutes

Release Rate: 7.06e-04 pounds/min

Total Amount Released: 0.042 pounds

THREAT ZONE:

Model Run: Gaussian

Red : LOC is not exceeded --- (15 ppm = AEGL-3(60 min))

Orange: LOC is not exceeded --- (7.1 ppm = AEGL-2(60 min))

Yellow: LOC is not exceeded --- (2 ppm = AEGL-1(60 min))

THREAT AT POINT:

Concentration

Estimates at the point:

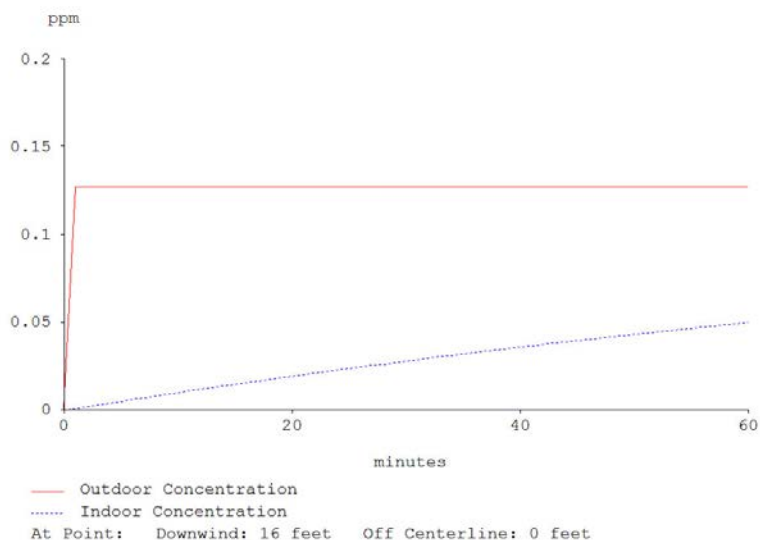
Downwind: 16 feet

Centerline: 0 feet

Max Concentration:

Outdoor: 0.127 ppm

Indoor: 0.0495 ppm



Off

2. Spill Releases

A spill at the site would most likely be associated with the leachate collection system at the site. The leachate collection system consists of the following:

- A leachate collection system that encompasses a portion of the perimeter of the CERCLA landfill. The collection system consists of a buried leachate collection system that collects runoff shed from the surface of the CERCLA landfill, and is then pumped to the 300,000 gallon leachate collection tank located at the CERCLA utility building.
- A leachate collection system that collects any leachate that is generated from the RCRA landfill. Leachate that collects in the RCRA landfill leachate collection systems drains to a sump located within the RCRA landfill sump building located adjacent to the landfill. Leachate that collects in the sump is transported via 500-gallon mobile tank to the 300,000 gallon leachate collection tank located at the CERCLA utility building.
- The 300,000 gallon leachate collection tank is connected via pipeline to a National Pollutant Discharge Elimination System (NPDES) discharge point located west of the site on the Columbia River.

Based on historical and current operations, the most likely scenarios for potential spills associated with the leachate collection system would be:

- In accordance with the approved Batch Discharge Protocol contained in the RCRA permit, leachate is sampled prior to discharge to verify discharge compliance levels of WAD cyanide (0.1 mg/L) are present in the treated leachate. Upon ODEQ approval, discharge of treated leachate from the 300,000 gallon storage tank occurs when approximately 150,000 gallons has accumulated in the tank. The potential for a spill of treated leachate occurs during the discharge process. Site personnel monitor the discharge from the leachate collection tank to the discharge at the Columbia River. At any point during the discharge procedure, if a spill is noted the site personnel terminate the discharge process at the storage tank. In a worst case scenario up to 300,000 gallons of treated leachate could be discharged to the ground surface if site personnel were

incapacitated for some reason. The primary Emergency Coordinator in the case of spill will follow standard procedure to control potential spills through instrumentation (i.e., shutting off valves at the storage tank). Upon assessing the spill, the Emergency Coordinator will request the assistance of the state and local agencies listed in **Section IV, Exhibit IV-1** if the volume of discharge is beyond the capacity of the Emergency Coordinator to address. A spill in this scenario can occur at any location between the leachate collection tank and the discharge point at the Columbia River. The majority of this route is above ground, and is located adjacent to natural drainages that feed to the Columbia River.

- The potential exists for failure of the leachate collection storage tank. This scenario has a maximum release volume potential of 300,000 gallons. The lined containment pond located adjacent to the storage tank has the capacity to contain a spill in excess of 300,000 gallons. The tank is designed in case of valve failure to drain to the lined containment pond. In case of structural tank failure the contents of the tank would drain to the containment pond. In this case the emergency coordinator will contact approved subcontractors to collect and store the released leachate until proper disposal can be arranged.
- In the case of transfer of leachate from the RCRA landfill to the leachate collection tank, up to 500 gallons of leachate could be released to the ground surface in case of a tank failure and/or spill. A spill in this amount would likely soak into the ground before spreading to any nearby drainage features. However the Emergency Coordinator in this case will be prepared to make efforts to limit overland migration of any spill.

In case of a spill, the Emergency Coordinator or a designated person will assess the nature and extent of the spill in accordance with the steps detailed in Section IV of this Contingency Plan, initiating any needed response actions such as system shut down, and then make the determination as to whether resources are sufficient to address the spill or if additional resources are needed.

Spill response equipment present at the site will be used to respond to any spills that are contained on site, or that are of a limited volume that the Emergency Coordinator or site

personnel can adequately respond. Spills of a volume that exceed the ability of Emergency Coordinator or site personnel to address, or have the potential to impact off site properties will be coordinated with the local response personnel listed in **Section IV, Exhibit IV-1** (Fire Department and Police Department). The Emergency Coordinator has the authority to engage emergency response contractors in regard to spills that will require containment and collection both onsite and offsite.

During and after completion of a spill response, notifications and reporting will be conducted in accordance with contact and reporting procedures detailed in **Section V** of this Contingency Plan.

G. Flooding

A flood at the site could occur and would most likely be associated with a torrential rainfall at the site. Drainage and sheet flow at the site is directed to a series of drainage ditches and storm drains that generally flow offsite from the north southward to the river. Periodic inspections are conducted to ensure the drainage system is maintained and kept in good repair. In 2008 the drainage on the north side of the Site at the CERCLA landfill was revised.

The site is located in a semi-arid region of Oregon where there are warm, dry summers and cold, wet winters. The average annual temperature is about 54 degrees F and the area receives approximately 10-15 inches of precipitation with an annual mean at The Dalles of 13.7 inches. The general topography controls the direction of surface-water runoff, except where structures exist that alter the flow patterns. The surface runoff from the southwest portion of the site flows to the south and east through a drainage channel prior to discharge to the Columbia River. Offsite storm water which would come from the west is controlled by Union Pacific Railroad, 2nd Street and Interstate 80 drainage systems which are adjacent to the site.

In the event of unexpected erosion from flooding that results in a breach of the landfill or in which the caps are damaged, the Emergency Coordinator (or alternate designated herein) will determine if a release has occurred and if there indications of such, will assess the nature and extent of the damage and in accordance with the steps detailed in **Section IX and Section XII** of

this Contingency Plan. He or she will initiate any needed response actions such as system shut down, and then make the determination as to whether resources are sufficient to address the spill or if additional resources are needed.

Runoff from the landfill area is intercepted by the leachate system and landfill ditch and then is routed to the discharge channel. Surface water from the northwest of the landfill discharges to the Chenoweth Creek. Currently, the general site is being decommissioned and the majority of the buildings have been demolished with the only the Specialty Metals building, Tenneson Engineering building, kiosk building, and CERCLA and the RCRA buildings remaining.

Spill response equipment present at the site will be used to respond to any spills that are contained onsite, or that are of a limited volume that the Emergency Coordinator or site personnel can adequately respond. Spills of a volume that exceed the ability of Emergency Coordinator or site personnel to address, or have the potential to impact offsite properties will be coordinated with the local response personnel listed in **Table 1** (Fire Department and Police Department). The Emergency Coordinator has the authority to engage emergency response contractors in regard to spills that will require containment and collection both onsite and offsite.

During and after completion of a spill response, notifications and reporting will be conducted in accordance with contact and reporting procedures.

XIII Evacuation Plan

A. Employee Evacuation

The areas of the site occupied by the waste management units (RCRA and CERCLA landfills, the Scrubber Sludge Pond Area, and the leachate collection, storage, and conveyance system) are staffed on a part time basis. Activities conducted at the waste management units may include landfill and scrubber pond maintenance or treatment, processing and discharging of leachate, and inspection and monitoring activities. Employees of the Bonneville Power Administration and the People's Utility District also occasionally require access to the landfills to monitor or service power line infrastructure located at the site.

In the event of a major accident or incident which has the potential to cause a release, explosion, or other hazard, all personnel in the area of the waste management units will be notified via cell phone or by direct contact with the Emergency Coordinator, Alternate Emergency Coordinator, or other authorized person (i.e., fire department, police department). The personnel will be advised that immediate evacuation is required and will be directed to leave in an up-wind direction whenever possible. The Emergency Coordinator or Alternate Emergency Coordinator will ensure that the gates are unlocked to allow egress from the site, and will re-lock the gates if appropriate.

B. Evacuation Criteria

In the event that a hazardous waste release incident could pose a potential threat to personnel health, life, or safety, the Emergency Coordinator, Alternate Emergency Coordinator, or other authorized person will evacuate the area of the waste management units. If the evacuation of areas outside of the RCRA and CERCLA landfills, the Scrubber Sludge Pond Area, and the leachate system is necessary, the Emergency Coordinator or Alternate Emergency Coordinators will provide any available information regarding the potential threat to persons in the vicinity of the site to the local fire or police department or other applicable agency. The evacuation of these areas will be handled by the local fire or police department or other applicable agency.

Situations that would warrant partial or complete excavation of the waste management unit areas may include the following:

- Explosions resulting in airborne debris.
 - Evacuate all personnel from the vicinity of the waste management units.
 - The evacuation of persons throughout the remainder of the site is not expected to be necessary; however, the extent of the evacuation should be based on the minimum safe distance from flying debris.
- Spills or chemical reactions resulting in a release of toxic or asphyxiating fumes or vapors (including spills from the leachate collection system).
 - Evacuate all personnel not equipped with appropriate protective equipment and breathing devices.
 - Suggest the evacuation of persons located downwind of the site if deemed necessary (be prepared for the possibility of shifting wind directions) and relocate them upwind of the site or other location deemed to be acceptable.
 - Based on the typical concentrations of WAD cyanide in the collected leachate, evacuations would not be required in the event of a release of leachate. Information regarding potentially higher WAD cyanide concentrations must be provided to the emergency responders by the Emergency Coordinator or Alternate Emergency Coordinator to determine if evacuations are necessary.
- Fire – Evacuation is required when the fire cannot be readily contained, could generate toxic or asphyxiating fumes or vapors, or create a danger of igniting potentially explosive materials.
 - Evacuate the immediate area.
 - If the potential exists for heat induced explosions, evacuate to a safe distance from the fire in all directions.

- If risk from exposure to toxic or asphyxiating fumes or vapor extends beyond the immediate area, evacuate persons located downwind of the site to an appropriate distance (be prepared for the possibility of shifting wind directions) and relocate them upwind of the site or other location deemed to be acceptable.
- Earthquake - The Emergency Coordinator or Alternate Emergency Coordinators will evaluate the effects of an earthquake and order any evacuation necessary. This determination will be made based on the potential for exposure to toxic or asphyxiating gases and the potential for explosions.

The necessary protection equipment must be worn by all emergency response personnel. All others must be evacuated and must be denied access to the affected areas.

The evacuation meeting/staging areas are shown on **Figure 1**.